

Using the Voluntary Measures Policy to Reduce Airport Related Emissions



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**Voluntary Measures Workshop
Dallas, Texas, June 25th, 1999**



AREAS FOR EMISSION REDUCTIONS



AIRCRAFT

- 〈 Aircraft Engine Retrofits
- 〈 Usage Practices
- 〈 Aircraft Routing

GROUND SUPPORT EQUIPMENT

- 〈 Electrification
- 〈 Retrofit
- 〈 Alternative Fuels
- 〈 Early Replacement
- 〈 Operations

GROUND ACCESS

- 〈 Airport Design
- 〈 Mass Transit
 - Light Rail
 - Subway
 - Clean Buses
- 〈 Airport Policies

CURRENT EPA EFFORTS



- n **Airport Ground Support Equipment:** Commissioned a comprehensive study of GSEs and developed a user-friendly computer model to estimate emission reductions and cost effectiveness
- n **Aircraft Emissions:** Ongoing efforts with FAA and industry, baseline emission studies, negotiations ongoing
- n **Airport Access:** Hopefully our next area of quantification- similar in form to GSE

Example of creating a Voluntary Measures Airport program

n **Step One: Examine the emissions produced at your airport. For each source estimate:**

- What % of your inventory it constitutes
- What are your options for reducing emissions
- How much control do you have over that source
- What are the operational effects
- What is the cost-effectiveness

n **Hints:**

- Start looking at your biggest sources first
- Include representatives from all aspects of airport mgt
- Let your state and regional EPA representative know about your intentions

Example of creating a Voluntary Measures Airport program

- n **Step Two: Determine several options from your list that look promising. For each option:**
 - Evaluate lifetime emission reductions for all pollutants you wish to take credit for. Note: there may be CO2 trading in the future
 - Develop a verification scheme for your emission reductions, i.e. testing, verifying operational practices, surveys, reports etc
- n **Hints:**
 - Check to see if another airport has done something similar, or if there is a national protocol
 - Update your state and EPA regional representatives

Example of creating a Voluntary Measures Airport program

- n **Step Three: Submit your request to your state representative and your EPA regional contact**
 - Develop a verification scheme for your emission reductions, i.e. testing, verifying operational practices, surveys, reports etc
- n **Step Four: State submits good faith credit estimate of VMEP program**
 - Uses the Technical supporting information you developed
 - Addresses the applicable criteria pollutants for the area

Example of creating a Voluntary Measures Airport program

- n Step Five: State commits to evaluation of voluntary program and to reporting data
 - Your evaluation and reporting scheme will be helpful
- n Step Six: State commits to remedying any shortfalls
- n Note: SIP submittal may contain several strategies
Submit your request to your state representative and
your EPA regional contact

GSE STUDY

- n Literature/Data Search
- n List of Equipment and Control Strategies
- n Population Estimates
 - Estimates Range 10,000 to 100,000 units
 - Aggregate regression~ 45,000 units
- n Activity Estimates
 - $(\text{GSE emissions/time period}) = (\text{g/bhp-hr}) \times \text{rated hp} \times (\text{hrs operation/time}) \times \text{load factor}$

GSE APPLICABLE REGULATIONS

- n Off road spark ignition >25hp
(60%)
 - no standards
- n Off road compression ignition
(33%)
 - standards 1996
- n Spark Ignition <25hp
 - standards 1997

Control Strategies

- n LPG/CNG (Gas -HC,CO,NO_x,PM)
(D:+HC,CO -NO_x,PM)
- n Electric
- n Gate Electrification/Fixed Gate Support
- n Retrofit/Aftertreatment
 - Oxidat, 3-way (-HC,CO,NO_x,PM+CO₂)
 - Trap (-HC,PM)



OMS Information & Resources

I OMS Transportation Air Quality Center (TRAQ) Homepage

3 <http://www.epa.gov/oms/transp.htm>

I OMS Program Assistance

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DEMONSTRATION

EPA GROUND SUPPORT EQUIPMENT EMISSIONS REDUCTION SPREADSHEET MODEL

